General

Guideline Title

Guideline for platelet transfusion thresholds for pediatric hematology/oncology patients.

Bibliographic Source(s)

C17 Guidelines Committee. Guideline for platelet transfusion thresholds for pediatric hematology/oncology patients. Edmonton (Alberta): C17 Council; 2011 Mar. 55 p. [55 references]

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

The grades for recommendations (1A, 1B, 1C, 2A, 2B, 2C) are defined at the end of the "Major Recommendations" field.

For the recommendations that follow, there is insufficient evidence to definitively support a particular threshold for transfusion. The recommendations that follow are adapted from guidelines developed for adult patients. They are based on expert clinical opinion and the deliberations of the C^{17} Guidelines Committee.

Recommendation		Evidence
Prophylactic approach	Prophylactic platelet transfusions at the threshold levels indicated below, rather than therapeutic transfusions at the time of clinically significant bleeding, are recommended for pediatric oncology patients.	1C
Threshold for patients with leukemia/lymphoma	Platelet threshold of 10 x 10^9/L is recommended for clinically stable pediatric patients receiving chemotherapy for leukemia. Transfusions at a higher level (given the absence of research evidence, as determined by clinical circumstances, generally at threshold of 40 x 10^9/L) may be required for patients with signs of bleeding, high fever, hyperleucocytosis, rapid fall in platelet count, acute promyelocytic leukemia (APL), concomitant coagulation abnormality, critically ill patients, and those with impaired platelet function (including drug induced).	1C

Recommendation	Transfusions at a higher level may be required for patients undergoing invasive procedures (see sections below).	Evidence
Threshold for patients post stem cell transplantation	Threshold for stable patients post stem cell transplantation to receive prophylactic platelet transfusions is 10 x 10^9/L. Transfusions at a higher level may be required for patients with signs of bleeding, high fever, rapid fall in platelet count, concomitant coagulation abnormality, critically ill patients, and those with impaired platelet function (including drug induced). Transfusions at a higher level may be required for patients undergoing invasive procedures (see sections below).	1C
Threshold for patients with solid tumors	Threshold for stable patients with solid tumors to receive prophylactic platelet transfusions is 10 x 10^9/L. Transfusions at a higher level may be required for patients with signs of bleeding, high fever, rapid fall in platelet count, concomitant coagulation abnormality, critically ill patients, and those with impaired platelet function (including drug induced). Transfusions at a higher level may be required for patients undergoing invasive procedures (see sections below). Transfusions at a higher level may be required for patients with bladder tumors or necrotic tumors.	1C
Threshold for patients with central nervous system (CNS) tumors	Note that these recommendations are based on a survey of neuro-oncologists (66.7%), neurosurgeons (11.1%) and others (22.2%) from the C[17] centers across Canada who treat pediatric neuro-oncology patients. The numbers provided are based on a minimum 75% acceptance of those responding to the survey. Therefore all evidence for this category would be classified as 2C (weak; recommendations with poor quality evidence; observation only) 1. Child has a CNS tumor with: • Ventriculo-peritoneal (VP) shunt or Ommaya reservoir - 30 x 10^9/L • Past history of intracerebral hemorrhage (ICH) - 50 x 10^9/L • An infant receiving intensive chemotherapy - 30 x 10^9/L • Child to undergo a neurosurgical procedure - 100 x 10^9/L 2. Child has gross total resection and is receiving chemo and/or radiation - 30 x 10^9/L 3. Child has residual tumor (subtotal resection or biopsy only) and is receiving chemo and/or radiation - 30 x 10^9/L 4. Child is receiving an antiangiogenesis agent - 50 x 10^9/L (Note - 72% of respondents accepted 30,000 as threshold in this circumstance) 5. Child to undergo lumbar puncture (LP) with past history of CNS tumor - 50 x 10^9/L	2C
Thresholds for patients with chronic thrombocytopenia	Stable patients with chronic, stable, severe thrombocytopenia due to alloimmunization should be observed without prophylactic platelet transfusions. These patients should receive platelet transfusions with clinically significant bleeding only.	1C
Threshold for patients requiring a lumbar puncture	Threshold for stable patients requiring an LP to receive prophylactic platelet transfusions is 20 x10^9/L. It is also recognized that some may be uncomfortable with a threshold of 20 x 10^9/L because of the potentially devastating consequences of an intraspinal bleed. Transfusions at a higher level may be required for patients with signs of bleeding, high fever, rapid fall in platelet count, concomitant coagulation abnormality, critically ill patients, and those with impaired platelet function (including drug induced).	2B

Recommendation		Evidence
	Transfusions at a higher level may be required for patients undergoing invasive procedures (see sections below). Transfusions at a higher level (>50 x 10^9) are recommended for diagnostic LP for newly diagnosed patients with leukemia to minimize the risk of a traumatic LP.	
Threshold for patients requiring a major invasive procedure	Threshold for stable patients requiring a major invasive surgical procedure to receive prophylactic platelet transfusions is 40-50 x10^9/L. Transfusions at a higher level may be required for patients with signs of bleeding, high fever, rapid fall in platelet count, hyperleucocytosis, APL, concomitant coagulation abnormality, critically ill patients, and those with impaired platelet function (including drug induced). Transfusions at a higher level may be required for patients undergoing invasive procedures (see sections below). Transfusions at a higher level may be required for newly diagnosed patients with leukemia or neurosurgical procedures or other invasive procedure with an intrinsic high risk of significant bleeding.	1C

Definitions:

Grades for Recommendations*

Grade of Recommendation	Benefit vs Risk and Burdens	Methodology	Implications
1A Strong recommendation, high-quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from well done randomized controlled trials (RCTs) or Exceptional observational studies	Apply to most patients in most circumstances Further research unlikely to change recommendation
1B Strong recommendation, moderate-quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from RCTs with some flaws in study or Very strong evidence from observational studies	Apply to most patients in most circumstances Further research might be helpful
1C Strong recommendation, poor-quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence of at least one critical outcome from observational studies, case series, or RCTs with flaws	Apply to most patients in many circumstances Further research would be helpful
2A Weak recommendation, high-quality evidence	Desirable effects closely balanced with undesirable effects	Consistent evidence from RCTs without important flaws or Exceptionally strong evidence from observational studies	Best action may depend on circumstances or patient or society values Further research unlikely to change recommendation
2B Weak	Desirable effects closely	Evidence from RCTs with important flaws	Best action dependent on

Grade of Recommendation	Benefit vs Risk and Burdens	Methodology	Implications
recommendation, moderate-quality evidence	balanced with undesirable effects	or Very strong evidence from observational studies	patient circumstances or patient or society values Further research may change recommendation
2C Weak recommendation with poor-quality evidence	Desirable effects closely balanced with undesirable effects	Evidence of at least one critical outcome from observational studies, case series, or RCTs with serious flaws	Other alternatives may be equally reasonable Further research very likely to change recommendation

*Guyatt, GH, Cook DJ, Jaeschke R, Pauker G, Schunemann HJ. 2008. Grades of recommendations for antithrombotic agents. Chest 133:123S-135.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Pediatric cancer
- Hematologic disorders, including thrombocytopenia

Guideline Category

Assessment of Therapeutic Effectiveness

Management

Risk Assessment

Clinical Specialty

Hematology

Oncology

Pediatrics

Intended Users

Advanced Practice Nurses

Nurses

Physicians

Guideline Objective(s)

- To provide clinical institutions and other organizations with a framework on which to build their own institutional protocols and to encourage standardization of protocols across regions to enhance consistency of care for patients and families
- To provide healthcare professionals with an approach to the routine assessment of pediatric oncology (cancer) patients for the requirement of platelet transfusions
- To facilitate the care of pediatric oncology patients at risk for bleeding from thrombocytopenia
- To provide recommendations on thresholds for platelet transfusion which balance the risk of bleeding versus the risk of platelet transfusion, inclusive of consideration of costs in quality of life and financial cost as well as consideration of appropriate utilization of limited resources with available blood products
- To reduce the impact on patients, families and staff of inconsistent practice, especially with transitions of care between centres

Target Population

Children and youth (age 1 month to 19 years) with cancer or serious hematologic disorders

Interventions and Practices Considered

Platelet transfusion based on assessment of thresholds

Note: The scope of this guideline is limited to the assessment of the platelet transfusion thresholds within the context of the patient's current clinical status and does not directly address issues related to other medical diagnoses. Although it was recognized there may be an impact on platelet transfusion thresholds, this guideline did not consider other aspects of platelet transfusion such as dose of platelet transfusions, ABO matching, presence of immature platelets, use of irradiated or cytomegalovirus (CMV) negative blood products, or apheresis versus single unit versus buffy coat procured platelet transfusions. The issue of platelet transfusion in the face of alloimmunization/platelet refractoriness is not addressed.

Major Outcomes Considered

- Mortality and morbidity
- Bleeding episodes
- Quality of life
- Financial costs
- Symptom severity
- Functional status

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

This guideline has been broadly adapted with permission from "Platelet transfusion for patients with cancer: clinical practice guidelines of the American Society of Clinical Oncology." The American Society of Clinical Oncology is not responsible in any way for the adaption. This guideline was updated with information from sources obtained through a Medline search of "platelet transfusion," "guideline," "pediatric" [published in English language], as well as secondary references from the literature reviewed. Preference was given to information obtained from randomized controlled trials where available; where not, best practice information was used to determine the recommendations for intervention contained in this guideline.

Guideline Search

Search Strategy

In March 2007, the Guidelines Committee of C17 conducted a comprehensive literature review and environmental scan to identify Guidelines and Standards specific to prophylactic platelet transfusions for children and youth with cancer or serious hematologic disorders. To ensure the currency of this list, a Research Consultant and Research Assistant used the following search strategy to identify guidelines and standards published between 2000 and 2008. The following processes were used to search for guidelines and standards:

1. Review of scientific literature sources using empirical databases – HealthStar, Medline, CINAHL, EMBASE and PsycINFO databases were systematically searched by a Research Consultant using the following search terms:
    - HealthStar Search terms: platelet transfusion threshold combined with terms of neoplasms, guideline or practice guideline
    - Medline Search Terms: platelet transfusion threshold combined with terms of neoplasms, guideline or practice guideline
    - CINAHL Search Terms: platelet transfusion threshold combined with terms of neoplasms or cancer and practice guidelines or standards
    - EMBASE Search Terms: platelet transfusion threshold cancer patient or cancer combined with terms of practice guideline
    - PsycINFO Search Terms: platelet transfusion threshold combined with terms of neoplasms, treatment guidelines or professional standards
2. Review of grey literature sources such as annual reports or publications of organizations as identified on the world wide web – The internet search engine utilized was Google Scholar. Search terms included: platelet transfusion threshold paired with terms of cancer, guidelines and standards.
3. Review of local, provincial, national and international databases
    a. All oncology professional associations and organizations for platelet transfusion threshold.
    b. All Canadian Provincial Cancer Care Organizations within provinces websites were searched (except Quebec: no provincial source found) including the *"site map"* to reveal any guideline or standard embedded under another topic inclusive of provincial cancer organizations, regional and local cancer organizations within provinces and specific guideline development organizations in cancer care at the provincial level such as the Program in Evidence-ÂBased Medicine, which is under the auspices of Cancer Care Ontario.
    c. International organizations or agencies or associations whose mandate is focused on systematic reviews or guideline development.

The organizations and agency's sites that were searched are included in Appendix B in the original guideline document.

Inclusion/Exclusion Criteria

Inclusion

1. Guidelines focused on clinical practice of practitioners relevant to pediatric platelet transfusion need assessment for pediatric hematology/oncology patients and their families.
    a. Clinical practice guidelines: those specific to situations in which clinicians are making decisions about direct patient care.
    b. Best practice guidelines: those that identify the best choice from a range of appropriate health care options, as defined by a consensus of experts following review of relevant literature using systematic review methods.
2. Published between 2000 and 2008.

*Exclusion**

1. Guidelines for which it was not clear that the guideline statements or recommendations were based on a review of evidence from the literature and/or were not based on a source that used evidence to support the guideline development process (included as topic areas in appendices only).
2. Guidelines focused strictly on assessment.

*Excluded guidelines may have still been considered by the panel during the guideline development process, but were not considered for the basis of guideline adaptation.

Note: Preference was given to guidelines and guides to practice that based the development of substantive statements/recommendations on a review of evidence from the literature and/or were based on a source that used evidence to support the guideline development process.

Literature Search for Empirical Studies to Supplement Guidelines

Sources of Evidence

- American Society of Clinical Oncology (ASCO) guideline which included a review of the literature up until mid-1999

- Searches of CINAHL, EMBASE, HealthSTAR, MEDLINE, PsycINFO, CDSR (Cochrane Database of Systematic Reviews), DARE (Database of Abstracts of Reviews of Effects), HTA (Health Technology Assessments) in May 2008 for systematic reviews published after 2000
- Randomized trials cited in relevant systematic reviews found by the search described above
- Search of CINAHL, EMBASE, HealthSTAR, MEDLINE, PsycINFO, CCTR (Cochrane Central Register of Controlled Trials) in June 2008 for randomized trials published after 2000; a literature search update for new randomized trials was conducted in March 2011
- Randomized trials cited by guidelines published between 2000 and May 2008. These guidelines were either listed in the *Literature Review and Environmental Scan* - or were found by a comprehensive update search for guidelines conducted in May 2008.

Inclusion/Exclusion Criteria

- The population of interest was: children and youth (age 1 month to 19 years) with cancer or serious hematologic disorder (and their families).
- A broad set of interventions and outcomes were considered eligible for the evidence review.

Interventions

- Assessment of platelet transfusion needs of patient including one or more of:
  - Physical (freedom from bleeding, needs for physical comfort and freedom from pain)
  - Informational (to inform patient and family decision making)
  - Psychological (needs related to risk of bleeding)
  - Practical (bleeding risks)

Specific attributes of assessment programs may also reflect sensitivity to the social and cultural context of the patient and special needs arising from social environment or general health issues.

Outcomes

- Quality of life
- Symptom severity
- Early identification of bleeding risk
- Reduced uncertainty
- Functional status

Results

Additional information gleaned from the literature review was incorporated as appropriate into the recommendations and outlined under the *Supporting Evidence and Information for Recommendations* section of the original guideline document.

See Appendix B in the original guideline document for a list of Web sites searched for guidelines and standards.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

See "Rating Scheme for the Strength of Recommendations" field, below.

Methods Used to Analyze the Evidence

Description of the Methods Used to Analyze the Evidence

Guideline Assessments

Each guideline was independently reviewed and scored by 6 panel members, using the Appraisal of Guidelines for Research & Evaluation (AGREE) instrument. The AGREE instrument provides a framework for the evaluation of guideline quality on the basis of 6 domains: scope and purpose; stakeholder involvement; rigour of involvement; clarity and presentation; applicability; and editorial independence. Domain scores and overall assessments from each reviewer were compiled for each guideline, and results were presented for discussion at an in-person panel meeting. Panel members were provided copies of all guidelines to facilitate discussion of the results and reach consensus on the suitability of each guideline for guideline adaptation via the ADAPTE process. Each guideline was discussed as to why they were or were not recommended. Particular attention was paid to rigor scores and guideline scope.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

ADAPTE Methodology

The initial stages of this project were informed by the guideline adaptation methodology developed by the ADAPTE Collaboration. The ADAPTE process is a systematic approach to considering the use and/or modification of existing guidelines developed in one context for application in a different context, so as to enhance the efficient production and use of high-Âquality adapted guidelines. The ADAPTE process is currently under evaluation for usability, acceptability, relevance and benefits to different user groups. Its use in this project was in the context of this evaluation. A summary of the ADAPTE process is provided in Figure 1 of the original guideline document.

Decision Process Followed by Panel

Decisions were established through panel discussions, whereby any differences of opinion were resolved with consensus. If consensus was unable to be reached, a vote was cast.

Rating Scheme for the Strength of the Recommendations

Grades for Recommendations*

Grade of Recommendation	Benefit vs Risk and Burdens	Methodology	Implications
1A Strong recommendation, high-quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from well done randomized controlled trials (RCTs) or Exceptional observational studies	Apply to most patients in most circumstances Further research unlikely to change recommendation
1B Strong recommendation, moderate-quality evidence	Desirable effects clearly outweigh undesirable effects or *vice versa*	Evidence from RCTs with some flaws in study or Very strong evidence from observational studies	Apply to most patients in most circumstances Further research might be helpful
1C Strong	Desirable effects clearly	Evidence of at least one critical outcome from	Apply to most patients in many

Grade of Recommendation	Benefit vs Risk and Burdens	Methodology	Implications
recommendation, poor-quality evidence	outweigh undesirable effects or *vice versa*	observational studies, case series, or RCTs with flaws	circumstances Further research would be helpful
2A Weak recommendation, high-quality evidence	Desirable effects closely balanced with undesirable effects	Consistent evidence from RCTs without important flaws or Exceptionally strong evidence from observational studies	Best action may depend on circumstances or patient or society values Further research unlikely to change recommendation
2B Weak recommendation, moderate-quality evidence	Desirable effects closely balanced with undesirable effects	Evidence from RCTs with important flaws or Very strong evidence from observational studies	Best action dependent on patient circumstances or patient or society values Further research may change recommendation
2C Weak recommendation with poor-quality evidence	Desirable effects closely balanced with undesirable effects	Evidence of at least one critical outcome from observational studies, case series, or RCTs with serious flaws	Other alternatives may be equally reasonable Further research very likely to change recommendation

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Cost Analysis

The guideline developer reviewed published cost analyses.

Method of Guideline Validation

External Peer Review

Description of Method of Guideline Validation

External Review and Consultation Process

The guideline was first reviewed by a panel of seven experts in pediatric hematology/oncology and/or transfusion medicine. They were asked to complete a questionnaire as summarized in the original guideline document.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate use of platelet transfusion thresholds to prevent or arrest major or critical bleeding

Potential Harms

Current risks associated with platelet transfusions in Canada are listed in a table in the original guideline document and include infections (bacterial, hepatitis, human immunodeficiency virus [HIV], human T-lymphotropic virus [HTLV], malaria); transfusion-related acute lung injury; febrile and allergic reactions; anaphylaxis; acute and delayed hemolysis; volume overload; and immunomodulation/multi-organ failure.

Qualifying Statements

Qualifying Statements

- C^{17} supportive care guidelines are developed by Canadian health professional specialists using evidence-Âbased or best practice references at the time of their creation. Format and content of the guidelines will change as they are reviewed and revised on a periodic basis. Care has been taken to ensure accuracy of the information. However, any physician or health professional using these guidelines will be responsible for administering transfusions and care according to their own institutional policies and standards of care.
- The American Society of Clinical Oncology (ASCO) guideline "Platelet transfusion for patients with cancer: clinical practice guidelines of the American Society of Clinical Oncology" mainly addresses the indications for adult patients. It is recognized that extrapolation of adult recommendations to the pediatric population is not always appropriate considering the differences in clinical disease and generally more aggressive treatment. When available, additional information was obtained specifically for pediatric patients and is highlighted in the section "Supporting evidence and information for recommendations" in the original guideline document.
- The scope of this guideline is limited to the assessment of the *platelet transfusion thresholds* within the context of the patient's current clinical status and does not directly address issues related to other medical diagnoses. Although it was recognized there *may be* an impact on platelet transfusion thresholds, this guideline did not consider other aspects of platelet transfusion such as dose of platelet transfusions, ABO matching, presence of immature platelets, use of irradiated or cytomegalovirus (CMV) negative blood products, or apheresis versus single unit versus buffy coat procured platelet transfusions. The issue of platelet transfusion in the face of alloimmunization/platelet refractoriness is not addressed.
- Although this guideline has been developed within the context of pediatric oncology, it is acknowledged that thresholds may be affected by more than the experience reflected in this guideline and may also be impacted by issues surrounding other existing co-morbidities. It is also acknowledged that the recommendations presented here are only the "best enough" recommendations based on the available evidence. Readers are reminded that implementation of these recommendations will depend on their "fit" with patient needs and preferences, clinician knowledge, skill and practice scope, available resources and organizational policies and standards.
- This guideline has been developed based on the assumption that the assessment process to determine an individual patient's requirement for platelet transfusion is the foundation for appropriate supportive transfusion interventions. Assessment for the requirement for platelet transfusion will allow the clinician and individual/family to identify a tailored and cost-effective approach.
- Just as assessment is only the first step in providing platelet transfusion care, this guideline represents only the beginning of a proposed series of guidelines to support clinical practice as it relates to blood and blood product transfusions. Guidelines specific to needs identified in the assessment process should be used to ensure more focused assessment and management of particular needs. In the meantime, readers are encouraged to refer to the reference list at the back of the original guideline document for other guidelines and resources related to interventions.
- The information contained in the original guideline document was prepared with care. However, any application of this material is expected to be based on judicious independent medical assessment in the context of individual clinical circumstances or with the input of a qualified clinician. The C^{17} Guidelines Committee does not make any guarantees of any kind whatsoever with respect to the content or use or application of this guideline. The C^{17} Guidelines Committee disclaims any responsibility for the application or use of this guideline.

Implementation of the Guideline

Description of Implementation Strategy

Implementation Considerations

The guideline will have been circulated to the seventeen Canadian centres providing tertiary pediatric hematology/oncology care for feedback prior to finalization of the guideline. The aspect most likely to provide difficulty is the threshold for lumbar puncture. Some centres will modify the recommended thresholds to accommodate patients living in more remote areas.

Tools for Application

Appropriate information and support will be provided to families so as to facilitate decision-Âmaking regarding the risks and benefits of platelet transfusion when the guideline has been approved.

Organizational Barriers and Cost Implications

Potential organizational barriers/cost implications to applying the recommendations found in this guideline include:

- Inability to obtain timely access to platelets

Patient/family preferences:

- Religious or other objection to platelet transfusion

Implementation Tools

Audit Criteria/Indicators

Foreign Language Translations

Quick Reference Guides/Physician Guides

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Living with Illness

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

C17 Guidelines Committee. Guideline for platelet transfusion thresholds for pediatric hematology/oncology patients. Edmonton (Alberta): C17

Council; 2011 Mar. 55 p. [55 references]

Adaptation

This guideline has been broadly adapted with permission from the following guideline:

- Schiffer, C., Anderson, K., Bennett, C., Bernstein, S., Elting, L., Goldsmith, M., et al. (2001). Platelet transfusion for patients with cancer: Clinical practice guidelines of the American Society of Clinical Oncology. *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology*. 19(5):1519-1538.

Date Released

2011 Mar

Guideline Developer(s)

C17 Council - Professional Association

Source(s) of Funding

Canadian Partnership Against Cancer, Health Canada

C^{17} (Council of Pediatric Hematology/Oncology Centres across Canada)

All work produced by the C^{17} Guidelines Committee is editorially independent of its funding sources.

Guideline Committee

C^{17} Guidelines Committee

Composition of Group That Authored the Guideline

Panel Members: Dorothy Barnard, pediatric hematologist/oncologist/hematopathologist; Carol Portwine, pediatric hematologist/oncologist; Lillian Sung, pediatric hematologist/oncologist; Lee Dupuis, pharmacist; Marcel Romanick, pharmacist; Gwen Erdmann, nurse; Anne McDermid, nurse practitioner; Anne Choquette, nurse; Maureen McCory, social worker

Financial Disclosures/Conflicts of Interest

The individuals involved in the development of this guideline had no conflicts of interest with respect to the development of the guideline. The guideline was developed independently from any funding body other than listed in the "Source(s) of Funding" field.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available in English and French in Portable Document Format (PDF) from the C17 Web site .

Print copies: Available from the C17 Council, Room 4047 RTF, 8308 - 114 St, Edmonton, AB, Canada T6G 2E1; Phone: 780-407-1488; Fax: 780-407-8283.

Availability of Companion Documents

The following is available:

- C17 Guidelines Committee. Guideline for platelet transfusion thresholds for pediatric hematology/oncology patients. Quick reference guide. Edmonton (Alberta): C17 Council; 2011 Mar. 5 p. Available in English and French in Portable Document Format (PDF) at the C17 Web site .

Print copies: Available from the C17 Council, Room 4047 RTF, 8308 - 114 St, Edmonton, AB, Canada T6G 2E1; Phone: 780-407-1488; Fax: 780-407-8283.

Additionally, key criteria for monitoring and/or audit purposes are provided in Appendix F of the original guideline document .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on December 23, 2011. The information was verified by the guideline developer on March 6, 2012.

Copyright Statement

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